

1967, such certification shall read "Meets FMCSA Bus Heater Requirements," "Meets FMCSA Flue-Vented Cargo Space Heater Requirements," etc.

(i) *Exception.* The certification for a catalytic heater which is used in transporting flammable liquid or gas shall be as prescribed under §177.834(1) of this title.

[33 FR 19735, Dec. 25, 1968, as amended at 40 FR 51198, Nov. 4, 1975; 53 FR 49401, Dec. 7, 1988]

#### § 393.78 Windshield wipers.

(a) Every bus, truck, and truck tractor, having a windshield, shall be equipped with at least two automatically-operating windshield wiper blades, one on each side of the centerline of the windshield, for cleaning rain, snow, or other moisture from the windshield and which shall be in such condition as to provide clear vision for the driver, unless one such blade be so arranged as to clean an area of the windshield extending to within 1 inch of the limit of vision through the windshield at each side: *Provided, however,* That in driveaway-towaway operations this section shall apply only to the driven vehicle: *And provided further,* That one windshield wiper blade will suffice under this section when such driven vehicle in driveaway-towaway operation constitutes part or all of the property being transported and has no provision for two such blades.

(b) Every bus, truck, and truck tractor, the date of manufacture of which is subsequent to June 30, 1953, which depends upon vacuum to operate the windshield wipers, shall be so constructed that the operation of the wipers will not be materially impaired by change in the intake manifold pressure.

#### § 393.79 Defrosting device.

Every bus, truck, and truck tractor having a windshield, when operating under conditions such that ice, snow, or frost would be likely to collect on the outside of the windshield or condensation on the inside of the windshield, shall be equipped with a device or other means, not manually operated, for preventing or removing such obstructions to the driver's view: *Pro-*

*vided, however,* That this section shall not apply in driveaway-towaway operations when the driven vehicle is a part of the shipment being delivered.

#### § 393.80 Rear-vision mirrors.

(a) Every bus, truck, and truck tractor shall be equipped with two rear-vision mirrors, one at each side, firmly attached to the outside of the motor vehicle, and so located as to reflect to the driver a view of the highway to the rear, along both sides of the vehicle. All such regulated rear-vision mirrors and their replacements shall meet, as a minimum, the requirements of FMVSS No. 111 (49 CFR 571.111) in force at the time the vehicle was manufactured.

(b) *Exceptions.* (1) Mirrors installed on a vehicle manufactured prior to January 1, 1981, may be continued in service, provided that if the mirrors are replaced they shall be replaced with mirrors meeting, as a minimum, the requirements of FMVSS No. 111 (49 CFR 571.111) in force at the time the vehicle was manufactured.

(2) Only one outside mirror shall be required, which shall be on the driver's side, on trucks which are so constructed that the driver has a view to the rear by means of an interior mirror.

(3) In driveway-towaway operations, the driven vehicle shall have at least one mirror furnishing a clear view to the rear.

[48 FR 57139, Dec. 28, 1983]

#### § 393.81 Horn.

Every bus, truck, truck-tractor, and every driven motor vehicle in driveaway-towaway operations shall be equipped with a horn and actuating elements which shall be in such condition as to give an adequate and reliable warning signal.

#### § 393.82 Speedometer.

Every bus, truck, and truck-tractor shall be equipped with a speedometer indicating vehicle speed in miles per hour, which shall be operative with reasonable accuracy; however, this requirement shall not apply to any driven vehicle which is part of a shipment being delivered in a driveaway-

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towaway operation if such driven vehicle is equipped with an effective means of limiting its maximum speed to 45 miles per hour, nor to any towed vehicle.

### § 393.83 Exhaust systems.

(a) Every motor vehicle having a device (other than as part of its cargo) capable of expelling harmful combustion fumes shall have a system to direct the discharge of such fumes. No part shall be located where its location would likely result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the motor vehicle.

(b) No exhaust system shall discharge to the atmosphere at a location immediately below the fuel tank or the fuel tank filler pipe.

(c) The exhaust system of a bus powered by a gasoline engine shall discharge to the atmosphere at or within 6 inches forward of the rearmost part of the bus.

(d) The exhaust system of a bus using fuels other than gasoline shall discharge to the atmosphere either:

(1) At or within 15 inches forward of the rearmost part of the vehicle; or

(2) To the rear of all doors or windows designed to be open, except windows designed to be opened solely as emergency exits.

(e) The exhaust system of every truck and truck tractor shall discharge to the atmosphere at a location to the rear of the cab or, if the exhaust projects above the cab, at a location near the rear of the cab.

(f) No part of the exhaust system shall be temporarily repaired with wrap or patches.

(g) No part of the exhaust system shall leak or discharge at a point forward of or directly below the driver/sleeper compartment. The exhaust outlet may discharge above the cab/sleeper roofline.

(h) The exhaust system must be securely fastened to the vehicle.

(i) Exhaust systems may use hangers which permit required movement due to expansion and contraction caused by heat of the exhaust and relative motion between engine and chassis of a vehicle.

[53 FR 49401, Dec. 7, 1988]

### 49 CFR Ch. III (10–1–01 Edition)

### § 393.84 Floors.

The flooring in all motor vehicles shall be substantially constructed, free of unnecessary holes and openings, and shall be maintained so as to minimize the entrance of fumes, exhaust gases, or fire. Floors shall not be permeated with oil or other substances likely to cause injury to persons using the floor as a traction surface.

[53 FR 49401, Dec. 7, 1988]

### § 393.85 [Reserved]

### § 393.86 Rear impact guards and rear end protection.

(a)(1) *General requirements for trailers and semitrailers manufactured on or after January 26, 1998.* Each trailer and semitrailer with a gross vehicle weight rating of 4,536 kg (10,000 pounds) or more, and manufactured on or after January 26, 1998, must be equipped with a rear impact guard that meets the requirements of Federal Motor Vehicle Safety Standard No. 223 (49 CFR 571.223) in effect at the time the vehicle was manufactured. When the rear impact guard is installed on the trailer or semitrailer, the vehicle must, at a minimum, meet the requirements of FMVSS No. 224 (49 CFR 571.224) in effect at the time the vehicle was manufactured. The requirements of paragraph (a) of this section do not apply to pole trailers (as defined in § 390.5 of this chapter); pulpwood trailers, low chassis vehicles, special purpose vehicles, wheels back vehicles (as defined in § 393.5); and trailers towed in driveaway-towaway operations (as defined in § 390.5).

(2) *Impact guard width.* The outermost surfaces of the horizontal member of the guard must extend to within 100 mm (4 inches) of the side extremities of the vehicle. The outermost surface of the horizontal member shall not extend beyond the side extremity of the vehicle.

(3) *Guard height.* The vertical distance between the bottom edge of the horizontal member of the guard and the ground shall not exceed 560 mm (22 inches) at any point across the full width of the member. Guards with rounded corners may curve upward